

REMARKS/ARGUMENTS

Claims 1-12 and 15-27 remain pending in the present application, of which apparatus claim 1 and method claim 25 are the independent claims. Dependent apparatus claims 13 and 14 having been cancelled herein in view of their limitations having been incorporated into their base claim 1. Independent method claim 25 has also been amended to incorporate, as an additional method step, the limitation of former claim 14, namely, that the fluid separator is bonded to the periphery of the fuel cell membrane electrode assembly.

In the March 25, 2004 Office Action, claim 17 was indicated as being allowable if rewritten in independent form including all of the limitations of its base claim and any intervening claims, and also to overcome the indefiniteness rejection.

Indefiniteness Rejections

As to the indefiniteness rejection, applicants submit that the term “separator” permissibly and properly applies to the fuel cell component recited in the claims for separating and distributing fluids at the periphery of a membrane electrode assembly. In this regard, the definition cited in the March 25, 2004 Office Action, taken from the National Fuel Cell Research Center’s website definitions (see http://www.nfcrc.uci.edu/fcresources/FCexplained/FC_Comp_Stack.htm), applies to separator *plates*. Nowhere in the specification or claims do applicants use the term “separator *plate*” to describe their claimed fuel cell component that separates and distributes *fluids* at the periphery of an MEA.

The applicants' claimed separator fluidly isolates the reactant and other gaseous and liquid streams that may be associated with a fuel cell, and therefore "separates" fluids and distributes them via passages that extend within the separator. The separator recited in the applicants' specification and claims is distinguished in an important way from a "separator plate": as set forth in the website definition referred to in the Office Action, "separator plate" is synonymous with the term "bipolar plate" and is defined as being a "plate [...] made of metal or a conductive polymer [that] usually incorporates flow channels for the fluid feeds and may also contain conduits for heat transfer" and "that acts as an anode for one cell and a cathode for the adjacent cell." (Website definition). The applicants' "separator", on the other hand, is not necessarily conductive, but is nevertheless fluidly isolating. To clarify this distinction, applicants have amended their pending claims to refer to the component in question as a "*peripheral fluid separator*".

With respect to conductivity, unlike the separator *plates* of the website definition, conductance or conductivity is *not* a requirement, or generally even desirable, in the applicants' fluid separator. If anything, the website definition is the one suffering from indefiniteness since the "separator plate" referred to there does *not* separate fuel cells *electrically* (it *does* separate them *fluidly* though). In fact, the website's separator plates do just the opposite with respect to conductance, namely, they *connect* the fuel cells electrically, which is why persons skilled in the technology involved here more frequently and appropriately refer to them as *bipolar* plates.

Anticipation and Obviousness Rejections Based upon Washington

As to the rejection of claims 1-4, 6-8, 10, 11, 13, 19-23 and 25-27 under 35 U.S.C. §102 as being anticipated by Washington et al. U.S. Patent No. 5,514,487, applicants submit that Washington cannot anticipate those claims because Washington nowhere discloses or suggests a fluid separator that is attached or bonded to the periphery of the membrane electrode assembly (MEA), as opposed to being attached or bonded to the flow field plate. Thus, contrary to the assertion in the Office Action with respect to Washington's FIG. 5, Washington's edge manifold is **not** attached to an MEA, as defined in the applicants' claims, but is instead attached to the cathode or anode flow field plates.

Attaching the fluid separator to the periphery of the MEA, as in the applicants' claimed structure, permits flow field plate constructions (such as, for example, the corrugated flow field plates described in paragraph 0012 of the applicants' specification) whose design and construction need not be dictated by the design and construction of the peripheral fluid separator. (Note that "attached", "bonded" and "an extension of" are all encompassed within the meaning of the term "bonded" in the applicants' specification and claims; see, for example, paragraph 0013, 0018, 0039 and claim 18). In the applicants' claimed design, fluid distribution features for fluidly connecting manifolds to the fuel cell's flow fields can be incorporated in a fluid separator attached to the periphery of the MEA, instead of being incorporated in a flow field plate.

Since Washington's edge manifold is **not** attached to the periphery of an MEA, as defined in the applicants' claims, but is instead attached to the cathode or anode flow field plates, Washington cannot anticipate pending claims 1-4, 6-8, 10, 11, 19-23 and 25-27.

As to the rejection of dependent claim 24 under 35 U.S.C. §103(a) for obviousness in view of Washington, applicants submit that the patentability of base claim 1 should render dependent claim 24 allowable as well. In this regard, Washington contains no disclosure or suggestion of a fluid separator bonded to the periphery of an MEA, as recited in claim 1, so Washington cannot render obvious claim 24, which incorporates the further limitations of a metallic, corrugated flow field plate.

Anticipation and Obviousness Rejections Based upon Marchetti

As to the rejection of claims 1-8, 10-16, 18-23 and 25-27 under 35 U.S.C. §102 as being anticipated by Marchetti U.S. Patent No. 6,284,401, applicants submit that Marchetti cannot anticipate those claims because Marchetti nowhere discloses or suggests a fluid separator that is attached or bonded to the periphery of the membrane electrode assembly (MEA).

Marchetti discloses a plate and gasket assembly (PGA), in which the gasket is *not* attached to the MEA. As with Washington, therefore, absent any disclosure or suggestion IN Marchetti of a fluid separator that is bonded to the periphery of an MEA, Marchetti cannot anticipate claims 1-8, 10-16, 18-23 and 25-27. Similarly, Marchetti cannot render obvious claim 9 because Marchetti contains no disclosure or suggestion of a fluid separator bonded to the periphery of an MEA, as recited in claim 1, along with the further limitations recited in claim 9, namely, that the peripheral fluid separator comprises a polyimide thermoplastic sheet.

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In view of the foregoing remarks, applicants submit that claims 1-12 and 15, 16 and 18-27 are allowable, in addition to claim 17 already indicated as being allowable rewritten to overcome the indefiniteness rejection. The Examiner is invited to telephone the applicants' undersigned attorney at (312) 775-8123 if any unresolved matters remain.

A Petition for One-Month Extension of Time accompanies this Amendment and Request for Reconsideration, as well as an authorization to charge the applicants' undersigned attorney's deposit account for the requisite fee for extension within the first month. Please charge any additional fees, and credit any overpayment, incurred in connection with this submission to Deposit Account No. 13-0017.

Respectfully submitted,



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